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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,671	03/29/2001	Yoshinori Miwa	684.3160	3160

5514 7590 05/23/2002

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EXAMINER

BROWN, KHALED

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,671

Applicant(s)

MIWA ET AL.

Examiner

Khaled Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17-23, 26-33 and 39-54 is/are rejected.
- 7) ☒ Claim(s) 14-16, 24, 25 and 34-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujie et al (US 5696623).

Re clm 1: Fujie et al discloses an exposure apparatus to be used with an excimer laser as a light source, said apparatus comprising: an optical system (op) disposed along a path of excimer laser light; a chamber (1) for accommodating said optical system therein and having an inside space (s2) being able to be replaced by a predetermined gas (nitrogen); a gas circulation mechanism having a gas discharging port (P out) for discharging a gas from said chamber and a gas supply port (p in) for supplying a gas into said chamber; and switching means (control of the apparatus) for selectively using plural purifiers (CL 1 and CL2) disposed in a portion of a gas circulation path.

Re clm 2: filters are disclosed parallel (Fig 12)

Re clm 3: Switching Valve (V) is disclosed

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Re clm 4: Gas flow can be shut down to a purifier (Col 6)

Re clms 5,6: Maintenance on the purifier and a control system (Inherent)

Re clm 7: gas supply (213) and discharging mechanism (214) are disclosed

Re clm 8: no gas is supplied from the chamber (Col 12 line 34)

Re clm9: second valve (Fig 12)

Re clm 10,11: inactive gas (nitrogen)

Re clm 12: Gas is supplied after placement or replacement of the purifier (Inherent)

Re clm 13: gas flowing time (Col 6 line 24)

Re clm 17: temperature control (108)

Re clm 18,19: removing oxygen (Col 4 line 39)

Re clm 20: chemical filter (Inherent since oxygen is being removed)

Re clm 21: Filter removes organic gas (Col 4 lines 26-40)

Claims 22,23,26-29,31-33, 44, 46-50,52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishi et al (5883704).

Re clm 22: Nishi et al discloses an exposure apparatus to be used with an excimer laser as a light source, said apparatus comprising: first (535) and second (514) chambers for maintaining a predetermined gas (Col 11 line 61) ambience (temperature) at a path (AX) of excimer laser light (EL); and an optical member (503A) for spatially separating said first and second chambers from each other, and being transmissive to the excimer laser light; wherein said optical member contains fluorine (Col 4 line 32) compound glass.

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Re clm 23: Optical integrator (503a)

Re clm 26: Quartz (Col 4 line 32 and Col 5 line 14)

Re clms 27,49: Laser light source or Argon (Col 5 line 13)

Re clm 28: different ambiences (536 , 507)

Re clm 29: different oxygen concentrations (Col 54 line 35)

Re clm 31: an optical element (503b)

Re clm 32: a gas supply port (537) and gas discharging port (538)

Re clm 33: a gas supply port (10A) and gas discharging port (516)

Re clm 44: Nishi et al discloses an exposure apparatus comprising :an optical system (PL1) having plural optical elements and a reflection member (37A will inherently reflect light) for deflecting light; and gas supplying means (13a) for supplying a gas to a space separated by optical elements of said optical system; wherein, in a space where said reflection member is present, a line connecting a vent hole (19) for supplying a gas to the space and a vent hole (23A) for discharging the gas from the space intersects an optical axis (AX) of the optical elements separating the space, as viewed from a direction orthogonal to the optical axis.

Re clm 46,47: inactive gas (nitrogen)

Re clm 48 : ultraviolet light (16)

Re clm 50 : projection optical system (PL 1)

Re clm 52: the claimed method steps can be performed with the above disclosed apparatus

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Re clm 53: a production group (Inherent since the wafers "W" must come from some source), LAN and gateway (18).

Re clms 52,54: the claimed method steps can be performed with the above disclosed apparatus

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30,39-43,45 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al (US 5883704).

Re clm 30: Nishi et al discloses the claimed invention as noted above. However, Nishi et al does not disclose that one chamber is controlled using helium and the other chamber using nitrogen. Nishi et al suggest that gasses other than nitrogen can be used to control each chamber (Col 54 lines 1-4) such as helium given the ready availability of helium. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use helium to control one of the chambers as suggested by Nishi et al due to its ready availability.

Re clms 39-43: Nishi et al discloses the claimed invention as noted above including that the two chambers are gas tight . However, Nishi et al does not disclose a bellows being used to connect the two chambers. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a bellows to connect the two

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chambers because bellows allow a gas tight connection to be made between two chambers. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a bellows to connect the two chambers of Nishi et al because bellows allow a gas tight connection to be made between two chambers as required by Nishi et al.

Re clm 51: the system is catoptric (15)

Allowable Subject Matter

Claims 14-16,24,25 and 34-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose or suggest the claimed structure of the invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohmi et al 5981075, Nishi 5892572, Sopori 5223453, Iwasaki et al 5407867, Oba et al 6342312, Tokuda 5812242, Arno et al 6322756, and Miwa et al 6259509.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khaled Brown whose telephone number is 703-306-5738. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

KB
May 18, 2002


RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
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